

**Notice of Allowability**

Application No.

10/761,086

Examiner

Henry S. Hu

Applicant(s)

DADALAS ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of September 16, 2004.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 6 pages
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. Applicants' amendment filed on September 16, 2004 was received.

**Claims 1, 3 and 9-11 were amended.** To be specific, parent **Claims 1** and **11** were clarified with the language of VTT as "Viscosity Transition Temperature", while Claim 3 was clarified with the language of HLB as "Hydrophilic Lypophilic Balance". With respect to the 112 and 101 rejection on Claims 9 and 10 since the claim does not set forth any steps involved in the method/process, the Applicants have made claim amendment with a specific method. The examiner thereby withdraws the claim objection and the 112-second paragraph/101 claim rejection in the previous Office Action dated June 17, 2004. **Claims 1-11 are pending now.**

2. Claim rejections under 35 USC 102 and/or 103 in the previous Office Action dated June 17, 2004 are now removed for the reasons given in paragraphs 3-9 thereafter.

### ***Allowable Subject Matter***

3. Claims 1-11 are allowed.
4. The following is an examiner's statement of reasons for allowance: The above claims 1-11 are allowed over the closest references:

5. The limitation of amended parent **Claim 1** of present invention relates to fluoropolymer dispersion comprising fluoropolymer particles having an average particle size of 10-400 nm dispersed in water, said dispersion having a solids content of 35-70 by weight, said dispersion being free of fluorinated surfactant having a molecular weight of less than 1000 g/mol or containing said fluorinated surfactant having a molecular weight of less than 1000 g/mol in an amount of not more than 0.05 % by weight based on the total weight solids of said dispersion, said dispersion further comprising a non-ionic non-fluorinated surfactant or mixture of non-ionic non-fluorinated surfactants and one or more non-fluorinated anionic surfactants, characterized in that the amount and nature of said non-ionic non-fluorinated surfactant or mixture of non-ionic non-fluorinated surfactants is selected such that the Viscosity Transition Temperature (VTT) of said fluoropolymer dispersion is at least 26°C and that the fluoropolymer dispersion is essentially free of aromatic group containing non-ionic surfactants. Other parent **Claim 11** relates to a method of providing a fluoropolymer particle dispersion of Claim 1. See other limitations of dependent **Claims 2-10**.

6. In view of the Applicants' amendment, the amended parent **Claims 1 and 11** of present invention both carry a combination of limitations of "fluoropolymer dispersion comprising fluoropolymer particles having an average particle size of 10-400 nm and a solids content of 35-70 by weight", "comprising other non-fluorinated/non-aromatic surfactant but is free of or containing not more than 0.05 % by weight of fluorinated surfactant" and "the Viscosity Transition Temperature (VTT) of said fluoropolymer dispersion is at least 26°C".

With respect to parent **Claims 1 and 11 in 102 and/or 103 rejections** for Claims 1-11, **McCarthy** only discloses the preparation of a stable aqueous self-dispersible fluorinated copolymer dispersion of up to 48% polymer solids in water in the absence of surfactant due to improved conversion rate of monomer to polymer. In view of the structure of fluoropolymer carrying a “surfactant-like” functional end groups, even the optional use of commercially available surfactants including non-ionic, anionic or cationic type may be added with an amount not higher than 5000ppm (column 8, line 34), and McCarthy's dispersion may therefore not obtain **the specific properties such as VTT of said fluoropolymer dispersion being at least 26°C.**

With respect to parent **Claims 1 and 11 in 102 and/or 103 rejections** for Claims 1 and 8-10, **Oxenrider** only discloses the preparation of stable aqueous fluorinated copolymer dispersion in the absence of soaps or surfactants due to improved wettability of polymer particles (abstract, line 1-12; column 3, line 18-23; column 16, line 18-31). **The required claimed non-fluorinated surfactant or a mixture was not added at all in the polymerization process.** In short, **Oxenrider** is only disclosing a suspension polymerization, not a emulsion polymerization although the dispersed particles in the stable aqueous suspension having a size of 0.01-1 micron are obtained.

With respect to **103 rejection for Claims 2-7 and 11** which are dependent from or similar to Claim 1, **both references fail to cure the deficiency of Claims 1 and 11 as discussed**

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**above.** Therefore, none of the above references, alone or in combination, teaches or fairly suggests the present invention.

7. With respect to Applicants' newly submitted IDS filed on August 20, 2004, **JP 2002-179870 to Toshiro et al.** (with abstract only) only discloses aqueous dispersion of a fluoropolymer with dispersion stability in the presence of nonionic surfactant. However, the claimed VTT and particle size are not disclosed. **US Patent No. 4,282,162 to Kuhls et al.** only discloses a process to recover fluorinated emulsifying acids by eluting the absorbed acids absorbed on weakly basic anion exchanger with a mixture of a dilute mineral acid and a water-miscible polar organic solvent (in an amount of 40 wt%) (abstract, line 1-8; column 2, line 23-66; column 5, line 21-25). **In a close view of US PG-PUB 2003/0125421 A1 to Bladel et al., US PG-PUB 2003/0130393 A1 to Cavanugh et al., and US PG-PUB 2003/0220442 A1 to Epsch et al.,** they all fail to disclose the claimed VTT.

Additionally, the present invention has shown in examples along with some comparative examples for unexpected results in obtaining the claimed fluoropolymer dispersion with limitations on surfactant and VTT property (see pages 15-17 for **examples 1-14 along with its control examples 1-5, and Table 1**). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

8. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

US Patent No. 6,642,415 B1 to Fuehrer et al. discloses a process to recover fluorinated emulsifier by eluting aqueous effluent from the production of fluoropolymers through anion exchanger with the aid of a water-miscible organic solvent (abstract, line 1-8; column 3, line 8-30). **The claimed VTT and particle size are not disclosed.** Therefore, Fuehrer fails to teach or fairly suggest the limitation of present invention.

9. The two key issues, the combination of limitations on (A) comprising other non-fluorinated/non-aromatic surfactant but is free of or containing not more than 0.05 % by weight of fluorinated surfactant” and (B) the Viscosity Transition Temperature (VTT) of said fluoropolymer dispersion is at least 26°C, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.

10. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the two independent and parent **Claims 1 and 11** are allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 2-10** are passed to issue.

11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue


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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".


12. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Henry S. Hu whose telephone number is (571) 272-1103. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Henry S. Hu

October 29, 2004

  
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